Third United Nations International Conference on the Peaceful Uses of Atomic Energy

A/CONF.28/A/7
CANADA
February 1964
Original: ENGLISH

Confidential until official release during Conference

Abstract

MANUFACTURING AND CONSTRUCTION FOR THE DOUGLAS POINT NUCLEAR POWER PROJECT

L. J. Ingolfsrud, P. H. G. Spray,
Atomic Energy of Canada Limited, Toronto, Ontario
and
J. H. Jackson,
Construction Division,
Hydro-Electric Power Commission of Ontario, Toronto, Ontario

1. The Douglas Point Project, located on the east shore of Lake Huron, is scheduled for completion in 1964 and for the generation of 200 megawatts of electricity in 1965. Brief description is given of the conventional aspects of the plant and a more detailed description of the fabrication and construction of the CANDU reactor system which provides the energy.

2. The following topics are discussed:

- The manufacture of the more important reactor components.

- The development and application of special techniques and procedures used in the fabrication of the calandria, end shields, coolant assemblies, steam generators and associated equipment; especially tube rolling, tubesheet welding, hydraulic and mechanical forming, and special machining operations.

- Requirements for high precision in certain reactor components; the methods used to attain this precision in the construction of CANDU components.

- Site organization and management; reviewing the construction schedule and manpower requirements.

- Site and construction plant facilities.

- Methods used in the erection and construction of the reactor and the reactor building.

- The forming, mixing and placing of light and heavy concrete in the reactor building and vault structure; methods used to achieve

the required shielding densities, dimensional accuracy and to minimize the effects of shrinkage.

- The construction of the reactor vault, the erection of its thermal shields and the containment liner for its atmosphere.

- Details of handling, preparation and installation of reactor components on site; the provisions and methods for moving large components into the reactor vault and the installation and alignment procedures for the end-shield rings, the end shields, calandria and dump tank.

- Special methods used in the installation of the reactor-coolant assemblies and in the erection of piping and equipment for the primary heat-transport system.

- The use of mock-up structures to prove installation procedures and train working forces.